Narrative CV

Thomas Mrsic-Flogel, PhD.

Professor of Neuroscience, University College London (UCL)
Director, Sainsbury Wellcome Centre

Eligibility criteria: State your current position, indicating how you meet the eligibility criteria as outlined within the UKRI-BBSRC Grants Guide.

I am permanently resident in the UK and will remain resident in the UK for the duration of the proposed project.

I hold employment as a Professor with University College London. This contract of employment extends beyond the duration of the proposed grant. It is funded by a long-term grant to UCL for the core funding of the Sainsbury Wellcome Centre, provided by Gatsby Charitable Foundation and Wellcome. Funding for my professorial position is underwritten by UCL.

1) **How have you contributed to the generation and flow of new ideas, hypotheses, tools or knowledge?**

Research in my laboratory aims to explain how the brain makes decisions by combining sensory information with previously learned knowledge. This research relies on training mice to perform complex behavioural tasks, and requires complex experimental design, combined with cutting-edge recording and data-analytic techniques, in order to produce sharable code and datasets (e.g. http://mouse.vision/han2017/) and publications (Orsolic et al 2021 Neuron; Clancy et al 2019 Nature Neuroscience; Chabrol et al 2019 Neuron; Han et al 2018 Nature; Kim et al 2018 Neuron; Khan et al 2018 Nature Neuroscience). We have also established brain-machine interfaces, wherein brain activity is used to control external actuators, requiring closed-loop experimental control (Clancy and Mrsic-Flogel, 2021 Neuron). As the behavioural tasks used in my lab require complex software-control of data acquisition and data analysis pipelines, I know first-hand their crucial importance for driving and enabling neuroscientific research.

I have published 49 peer-reviewed papers, with an h-index of 35 (calculated by google scholar).

I am a founding member of the International Brain Laboratory (IBL), a global consortium which brings together researchers from experimental and theoretical disciplines to understand decision-making in the in brain (IBL et al 2019 Neuron). The Bonsai ecosystem is critical to IBL, as it ensures that experimental control, stimulus presentation and data acquisition can be identically reproduced across all participating labs in UK, Europe and USA (IBL et al 2021, eLife)

2) **How have you contributed to research teams and the development of others?**

As Director of the Sainsbury Wellcome Centre (SWC) at University College London, I am responsible for setting the Centre's strategic and scientific direction, which currently comprises 12 experimental labs. This includes presenting the Centre's strategy to the SWC Governing Board, including representatives of our funding organisations, to secure on-going funding. In addition, I have line management responsibilities for the Executive Team, several members of the SWC Faculty, and numerous scientific and administrative support staff.

The SWC building also houses our sister organisation, the Gatsby Computational Neuroscience Unit (GCNU; co-applicants on this proposal). Professor Sahani and I work closely together on strategic approaches to bringing experimental and theoretical neuroscience closer together. The work in this proposal would provide an additional, powerful mechanism to achieve this; it facilitates the use of the world-

class Machine Learning expertise held at GCNU to contribute to driving forward experimental research at SWC and in the global neuroscience community.

As SWC's Director, I have established a Carer's support fund that makes significant financial contributions to early career researchers who require financial assistance for childcare or other dependants, thus promoting careers of individuals who would not otherwise be able to continue in active research.

In addition to this strategic responsibility, I have led a laboratory since 2008 (at UCL, as Associate Professor at the Biozentrum in Basel, and now at the SWC). I have successfully supervised 10 MA students and 7 PhD students. 8 of the 12 postdocs who have left my lab have successfully gone on to independent Group Leader positions at other institutions.

3) How have you contributed to the wider research community?

In addition to the responsibilities outlined above, I am Chair of the Scientific Advisory Committee for the new Allen Institute for Neural Dynamics, which provides support and scientific direction to the Director Karel Svoboda in establishing this new long-term research area.

Since 2018, I have been a member of the ALBA steering committee, which works to promote equality and diversity in Brain Sciences in Europe. I was Chair of the FENS Programme Committee for the Berlin 2018 meeting, and a member of the FENS Executive Committee.

In response to discussions within SWC, I established the Research Culture Working Groups, which provide a platform from which to discuss and initiate actions to promote open and collaborative science, and a progressive, supportive and equitable research culture within SWC.

I acted as reviewer for numerous journals (*Nature, Nature Neuroscience, Neuron, PNAS, Journal of Neuroscience, Current Biology* and many others) and funding agencies (*Wellcome, Medical Research Council, Swiss Science Foundation, European Research Council, Royal Society, Deutsche Forschungsgesellschaft, French Science Foundation* and many others).

4) How have you contributed to broader society?

I am a member of Wellcome's Mental Health Strategic Advisory Board, which helped define Wellcome's strategic approach to this major area of research and funding focus over the coming years.

I have set the strategic direction for public engagement activities at the SWC, including emphasising a focus on supporting students from underrepresented groups to successfully move into scientific study and careers. I have also contributed to public engagement activities both via SWC and via local schools in London. I have instigated a series of public lectures at the Centre to bring together members of the local community, scientists, broadcasters, philosophers and science policy makers.

5) Additional information

N/A